

UNITED STATES DISTRICT COURT  
WESTERN DISTRICT OF WISCONSIN

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GRICE ENGINEERING, INC.,

Plaintiff,

v.

Case No. 09-CV-632

JG INNOVATIONS, INC., and  
GORDON "JACK" GRICE,

Defendants.

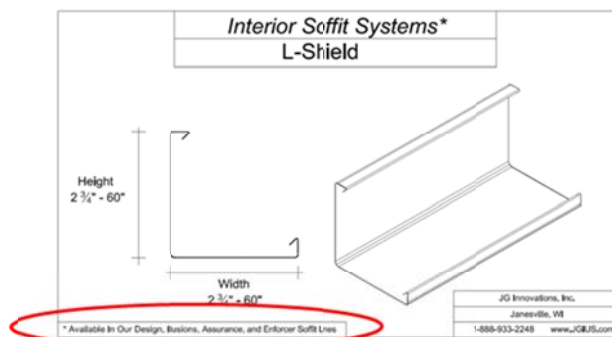
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**EXPERT REPORT OF DAVID C. FRANCHINO REGARDING INFRINGEMENT**

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## Introduction

1. I have been asked by counsel for Grice Engineering, Inc. ("GEI") to express my opinions regarding whether certain of JG Innovations, Inc.'s ("JG Innovations") conduit concealment products, generally marketed as the JGI Interlock™ Concealment System, infringe one or more claims of US Patent No. 5,526,617 (the " '617 patent") assigned to GEI.
2. The product I have considered in the preparation of this report is the JGI Interlock™ Concealment System. (In my report I refer at times to the JGI Interlock™ Concealment System as the "Accused Product".) Based on my review of JG Innovations' web site, the JGI Interlock™ Concealment System product line includes four models: Design, Illusions, Assurance and Enforcer. These models are comprised of a series of 28 shared components. Inspection of CAD models on JG Innovations' web site indicates that each of these 28 components are utilized across all models. A typical CAD drawing is shown below:



\* Available In Our Design, Illusions, Assurance, and Enforcer Soffit Lines

3. A review of the installation manual available on the web site states: *"There are minimal differences between our Architectural/Aesthetic/Commercial/Security Soffit systems. Our Architectural, Aesthetic and Commercial lines utilize slip couplings for proper fastening of seams and are typically comprised of light to medium duty material; whereas our Security soffit system is manufactured in a heavier gauge material and requires riveted joints where seams occur".*
4. Thus, for the purposes of this analysis, references to any of the JGI Interlock™ Concealment System models or components may be used interchangeably.
5. The following shared components within the product are deemed to include features relevant to my analysis. Bow-Shield, Crown Molding Shield, Slope Top Shield, Soft Edge Shield, Factory-Fabricated L-Shield Outside Corner, L-Shield with Access Panel, L-Shield Clip Assembly, L-Shield Coupling Assembly, L-Shield, Field-Fabricated L-Shield Outside Corner, U-Shield with two Sprinkler Heads, U-Shield Clip Assembly, U-Shield Coupling Assembly, U-Shield with vent, U-Shield and Factory-Fabricated U-Shield Outside Corner and Elbow
6. These products are represented by CAD drawings shown on JG Innovation's web site (<http://www.jgius.com/Support/CADDrawingsInteriorSoffitSystems/tabid/319/Default.aspx>) as well as being included within Exhibit F.
7. The patent claims I have considered in preparing this report include claims 1, 2, 10, 11, 13 and 14 of the '617 patent.

### **Background and Experience**

8. I am the President of Design Concepts, Inc., a Madison, WI based product design consulting firm with approximately 50 employees in fields including mechanical engineering, electrical engineering, prototyping and other technical disciplines. Previously I have held engineering and management positions in both design and manufacturing engineering for General Motors' Saturn Corporation.
9. I have over 25 years of experience in the field of mechanical engineering including a background in steel stamping and fabrication.
10. I have taught mechanical design classes at the University of Wisconsin, Madison.
11. I have lectured and spoken extensively on the topic of product design.
12. I received a BS from the University of Wisconsin, Madison in Mechanical Engineering where I graduated with honors.
13. I received an MS in Manufacturing Systems Engineering from Stanford University where I graduated first in my class.
14. My compete resume which provides further details of my professional experience is attached as Exhibit A.

### **Compensation**

15. My current billing rate for this project is \$250/hour.

### **Materials Reviewed**

16. To prepare this report I reviewed the patent in question for this suit and its file history.

17. I have also reviewed Grice Engineering, Inc. v. JG Innovations Complaint and Defendant's Answer to Complaint, Affirmative Defenses and Counterclaims.

18. I have studied the CAD drawings, pictures, descriptions of, and specifications for, the JGI Interlock™ Concealment System available on the web site: <http://www.jgius.com>.

19. A complete list of the materials and other information I considered in forming my opinions in this case is provided in Exhibit F.

### **Construction of Claim Terms**

20. I understand that claim terms in the '617 patent are to be construed according to their plain and ordinary meaning in light of the specification. I also understand that the defendants did not ask the Court to construe any claim term in the '617 patent, the deadline for which was May 28, 2010.

### **Background and Technology**

21. The teachings of the '617 patent are generally aimed at allowing for the enhanced installation of covers to shield mechanical or electrical conduit located within a building. Retrofitted buildings (and often new construction) often have exposed fire sprinkler systems, plumbing, piping, cables, etc. adjacent to the intersections of walls and ceilings. Such features are considered unsightly and it is often desired to provide a more attractive appearance which can be accomplished with soffit covers. In addition, in certain institutional settings, such covers are prone to vandalism or can be used to store illicit contraband materials.
22. The purpose of the conduit concealment system described in the invention is to both provide a neater, tidier and more cosmetically attractive appearance to the interior of a building and also prevent "tampering" so that contraband and weapons cannot be stored inside them.
23. The invention relies on a system of covers designed to interact with a series of clips referred to as a "base part" that have been secured to walls or ceilings. The "base parts" have been designed in such a manner so that installation of the covers is accomplished with a one-time "snap fit" and removal is difficult or impractical without significant effort or tools.
24. The Accused Product contains the same basic structure and operation as the components disclosed in the '617 patent. In addition, the Accused Product is designed to address the same problems identified in the '617 patent: a tamperproof means for concealing conduit. The components disclosed on JG Innovations' web site including "Covers" and "Clip Assemblies" are substantially identical in form, function and purpose as the corresponding elements recited in the relevant claims in the '617 patent.

## **Opinions**

### **Person of Ordinary Skill in the Art**

25. In my opinion, the art and science involved with the invention require experience in the design and manufacturing of steel stampings. A person of ordinary skill would have an undergraduate degree in mechanical engineering degree and at least 5 years of post-undergraduate experience related to the design of metal stampings. I consider myself to be such a person.

### **Summary of Infringement Opinions**

26. The opinions I have reached with regard to infringement can be summarized as follows: The JGI Interlock™ Concealment System contains each and every limitation of claims 1, 2, 10, 11, 13 and 14 of the '617 patent, either literally or equivalently. My opinions are supported by product descriptions, pictures and specifications and CAD files available on JG Innovation's web site, <http://www.jgius.com/>. These opinions are detailed both below and in Exhibit E, which includes a claim chart identifying on an element-by-element basis, each limitation of an asserted claim present in the Accused Product.

27. Moreover, my conclusions are supported by a review of information found in the documents Grice Engineering, Inc. Plaintiff v. JG Innovations, Inc. Gordon "Jack" Grice Defendants Complaint, Plaintiff Grice Engineering, Inc.'s Initial Disclosure of Asserted Claims and Preliminary Infringement Contentions and Defendants JG Innovations, Inc.'s and Gordon Grice's Non-Infringement Claim Chart (Exhibit A to Defendant's response to Plaintiff's First Set of Interrogatories).

28. For the purposes of this infringement analysis, references to the individual models of the JGI Interlock™ Concealment System may be used interchangeably as features corresponding to each of the asserted claim limitations are present and essentially identical in all products.
29. The claim charts and corresponding illustrations included in Exhibit E demonstrate, on a limitation-by-limitation basis how the defendant's Accused Product infringes the asserted claims. A more detailed infringement analysis of certain claim limitations is set forth below.

**Tamperproof Concealment – ‘617 all asserted claims**

30. The system described in both claim 1 and 13 are closely related and functionally identical - the primary difference being that claim 1 pertains to conduit located at *an intersection of two constructional surfaces that are normal to each other* (most typically a wall and adjacent ceiling) and claim 13 pertains to a single constructional surface.
31. Thus it can be understood that claim 1 generally refers to an "L" shaped conduit cover located between two constructional surfaces whereas claim 13 generally refers to a "U" shape covering conduit located on a single surface.



32. A comparison of the claim language used between claim 1 and claim 13 shows that these claims are identical with the exception of this distinction. Thus, for the purposes of this analysis, these two claims will be discussed as a single topic keeping in mind this distinction.

<b>1</b> <b>"L" Shaped</b> <b>(Used between two construction surfaces).</b>	<b>13</b> <b>"U" Shaped</b> <b>(Used on a single construction surfaces).</b>
1. A system for the tamperproof concealment of a conduit situated proximal to an intersection of two constructional (sic) surfaces that are normal to each other, the system comprising:	13. A system for the tamperproof concealment of a conduit situated proximal to a constructional surface, the system comprising:
(a) base means having respective parts thereof proportioned for securement to said respective constructional surfaces	(a) base means having respective parts thereof proportioned for securement to said constructional surface
said base means having first and second distal ends thereof for corresponding to one each of said constructional surfaces	said base means having first and second distal ends thereof
each of said ends comprising in cross-section,	each of said ends comprising in cross-section,
first complemental engagement means having an outward-to-inward curvature relative to each of said constructional surfaces upon installation	first complemental engagement means having an outward-to-inward curvature
said curvature of said ends defining an inwardly directed transverse channel for location parallel to said intersection of said constructional surfaces; and	said curvature of said ends defining an inwardly directed transverse channel for location parallel to said constructional surface; and
(b) cover means defining a continuous integral surface for location between said constructional surface	(b) cover means defining a continuous integral surface
said cover means defining a longitudinal axis parallel to said intersection of constructional surfaces,	said cover means defining a longitudinal axis for location parallel to said constructional surface
said cover means having first and second longitudinal ends for placement adjacent one each of said constructional surfaces	said cover means having first and second longitudinal ends

each of said longitudinal ends comprising, in cross-section, second complementary engagement means having an inward-to-outward curvature complementary to said first engagement means of said base means, said curvature of said ends defining an outwardly directed longitudinal channel complementary to said inwardly directed channel of said distal ends of said base means, said respective channels proportioned for non-reversible snap-fittable mutual engagement therebetween.

each of said longitudinal ends comprising, in cross-section, second complementary engagement means having an inward-to-outward curvature complementary to said first engagement means of said base means, said curvature of said ends defining an outwardly directed longitudinal channel complementary to said inwardly directed channel of said distal ends of said base means, said respective channels proportioned for non-reversible snap-fittable mutual engagement therebetween.

33. The '617 patent claims a system for the tamperproof concealment of conduit.

34. The JGI Interlock™ Concealment System is designed for tamperproof concealment of conduit.

This is evidenced by descriptions, photographs and specifications available on the JG Innovations web site. See, e.g., "Architect/Engineer Specifications Section 13900 / 21 00 00

INSTITUTIONAL COVER SYSTEM FOR CONCEALMENT OF FIRE SPRINKLER SYSTEMS, PIPING, HVAC, CONDUIT, WIRING, AND CABLE," available on JG Innovations' web site at:

<http://www.jgius.com/Support/CustomSpecifications/tabid/318/Default.aspx>

Architect/Engineer Specifications	
Section 13900 / 21 00 00	
COMMERCIAL COVER SYSTEM FOR <u>CONCEALMENT OF</u> FIRE SPRINKLER SYSTEMS, PIPING, HVAC, CONDUIT, WIRING, AND CABLE	
PART I	GENERAL
1.01	DESCRIPTION
A.	The interior soffit system shall incorporate a concealed snap-lock assembly connection which, once assembled, renders the cover essentially <u>irremovable</u> with the use of ordinary tools.

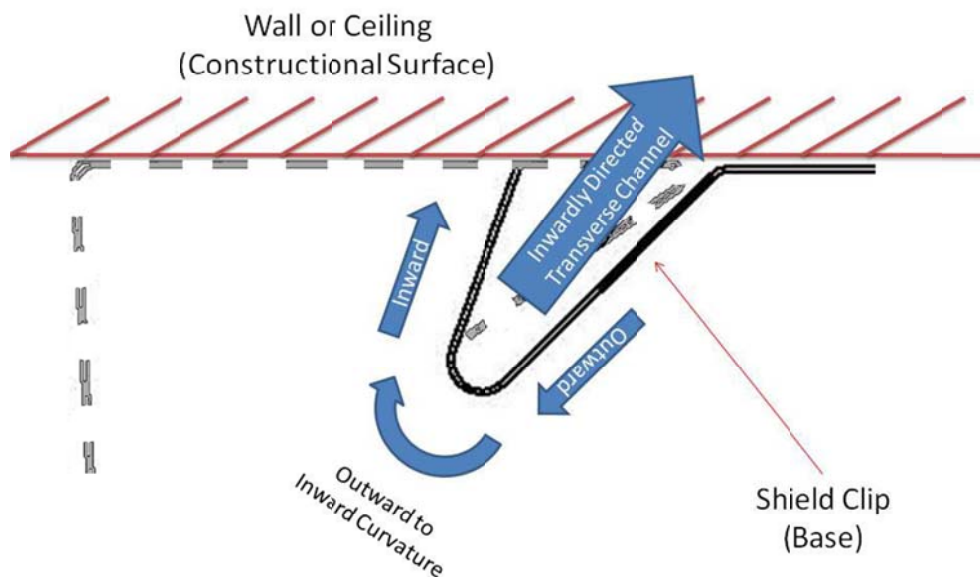
35. This specification is provided for the “Illusions” model, however similar descriptions and specifications exist for all models of the JGI Interlock™ Concealment System.

36. Thus, the JGI Interlock™ Concealment System provides for the tamperproof concealment of a conduit as recited in independent claims 1 and 13 of the '617 patent.

**Base Means - '617 Patent claim 1a and 13a**

37. Literal Infringement - The JGI Interlock™ Concealment System relies on a system of "Clips" - referred to on the web site as “Shield Clips” - to provide a snap fit feature to the soffit covers.

As previously shown, the base means described for both claim 1 and 13 are functionally identical and these two claims will be addressed together in this analysis. The '617 patent teaches that the base means define an inwardly directed transverse channel. This is done by means of an outward to inward curvature *relative to the construction surface*. This exact feature is present in the JG Innovations “Shield Clips” as shown on the CAD drawings provided on the company web site and annotated below for clarity.



38. The relevant claim language is repeated here: *“(a) base means having respective parts thereof proportioned for securement to said respective constructional surfaces, said base means having first and second distal ends thereof for corresponding to one each of said constructional surfaces, each of said ends comprising in cross-section, first complementary engagement means having an outward-to-inward curvature relative to each of said constructional surfaces upon installation, said curvature of said ends defining an inwardly directed transverse channel for location parallel to said intersection of said constructional surfaces;. . .”*

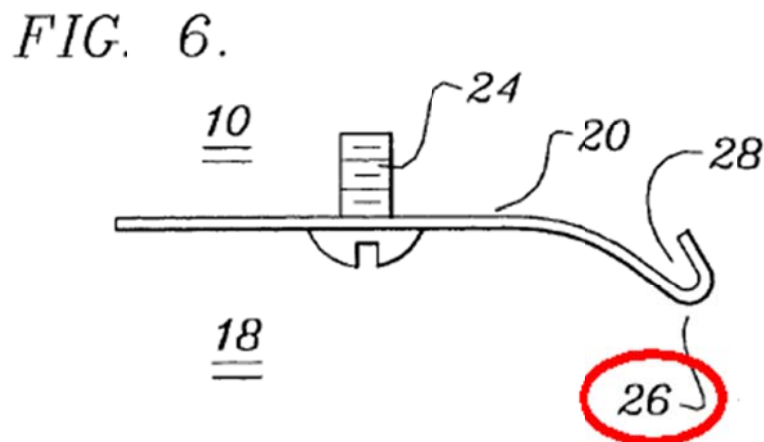
39. Thus, each and every limitation of claims 1a and 13a is literally present in the JG innovations “Shield Clips.”

40. In the document Defendants JG Innovations, Inc's and Gordon Grice's Non-Infringement Claim Chart (Exhibit A to Defendant's Response to Plaintiff's First Set of Interrogatories), defendants

contend that the JGI Interlock™ Concealment System does not contain the element of "an outward-to-inward curvature". They furthermore assert that the JGI interlock™ Concealment System, *"instead, uses a single outward angle and a second, inward curve separated by a straight portion of metal."* Thus, defendants interpret the relevant claim language as describing two different sections of the distal end of the base means.

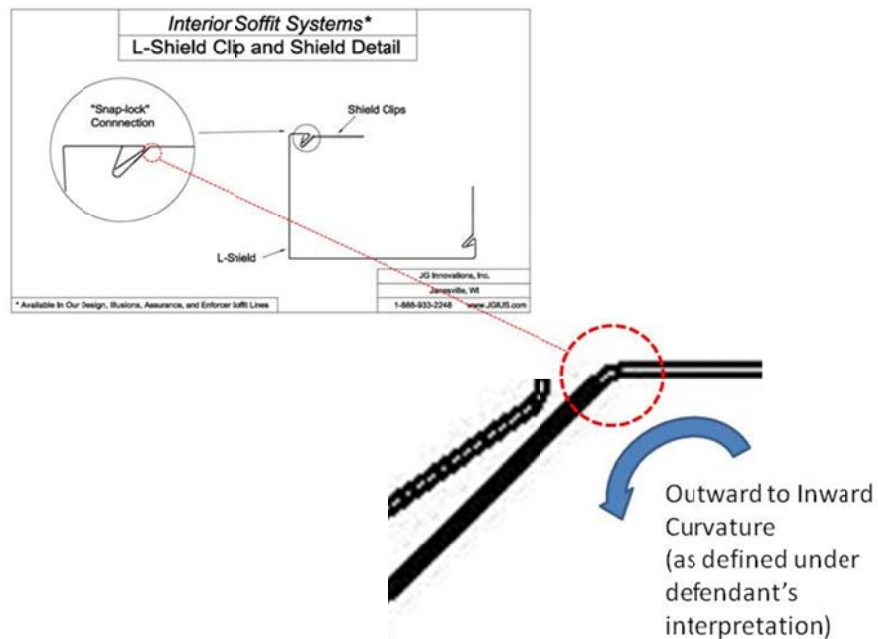
41. It is my opinion that this interpretation of the relevant claim language is flawed as it defines the outward curve as occurring in the first transition off the construction surface and the inward curve occurring following a straight transition. This interpretation can be seen to be in error because the patent specification clearly describes that the outward-to-inward curvature refers only to the distal end of the base piece. This element is clearly described and identified in figure 6 of the patent illustration as number 26.

42. The relevant language and figure from the '617 patent specification are repeated here: “*Distal end 26 of base part 20 is characterized by an outward-to-inward curvature relative to the constructional surface 10...*”



43. The specification clearly teaches that it is the outward-to-inward curvature that forms the transverse channel (shown as item 26 above). If the interpretation presented by the defendant in its non-infringement claim chart were correct, only the inward curvature would form the transverse channel and the inward curvature would have been referenced as a separate item number in the patent specifications. Thus it can be seen that the defendants advance an erroneous interpretation of the relevant claim language of patent claim 1a and 13a in an attempt to avoid infringement.

44. In the event, however, that the defendants' interpretation of the language in claim 1a and 13a is deemed correct - it is my opinion that the JG Innovations' "Shield Clips" still infringe upon these claims. Inspection of the CAD drawings shows the presence of a small fillet radius in the corner of the base part - effecting the transition from the flat surface connected to the wall or ceiling and leading into the transverse channel.



45. Such a fillet radius would be the natural result of the stamping operation where sharp corners are typically avoided as they create undesirable conditions in the stamping tooling and can create stress concentrators where fractures can initiate. Thus, even if the defendant's interpretation is deemed correct, the JG Innovations' "Shield Clips" would feature outward-to-inward curvature under their interpretation and would still literally infringe upon claims 1 and 13.

46. Finally, any perceived difference between the base means described in patent claims 1 and 13 and design details illustrated in the JG Innovation CAD drawings are insubstantial as the "Shield Clips" contain similar features and function identically to the base means recited claims 1a and

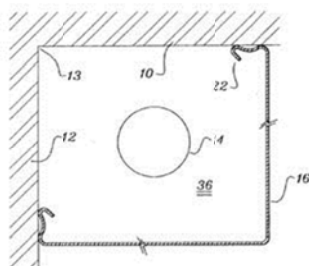
13a. Accordingly, if an outward to inward curvature is deemed to not be literally present in the JG Innovation "Shield Clips" an infringing equivalence is present.

### Cover Means - '617 Patent claims 1b and 13b

47. As previously shown, the cover means described in claim 1 generally constitutes an "L" shape between two surfaces whereas the cover means described in claim 13 generally constitutes a "U" shape. JG innovations' web site similarly discloses both an "L shield" and a "U-shield" for accommodating both configurations recited in claim 1b and claim 13b.

'617 Patent – L shaped Cover  
(two constructional surfaces  
that are normal to each other)

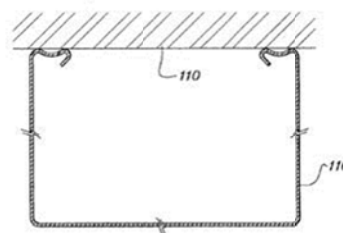
FIG. 3.



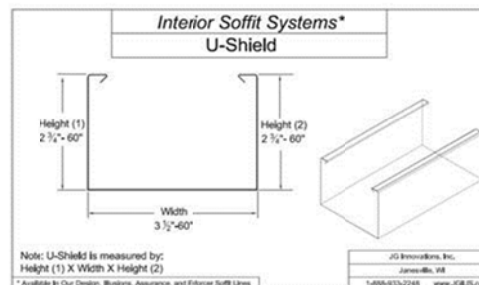
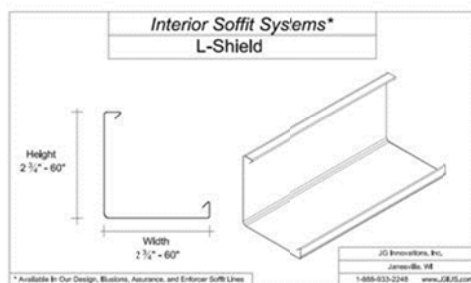
JG Innovations – L Shield

'617 Patent – "U" shaped Cover  
(Single constructional surface)

FIG. 11.

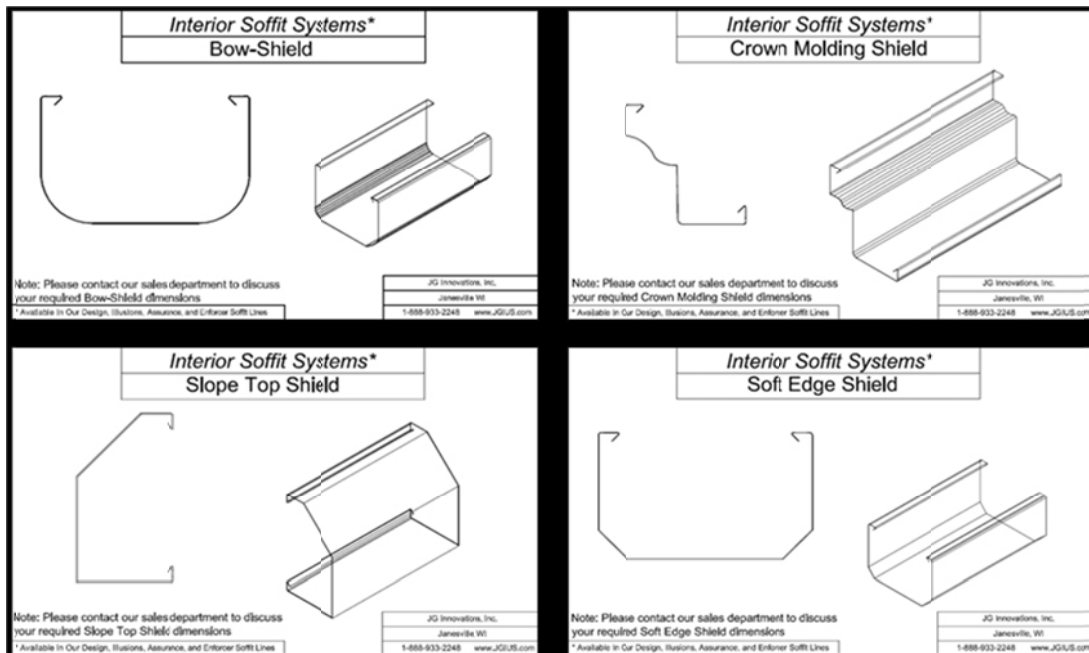


JG Innovations – U Shield





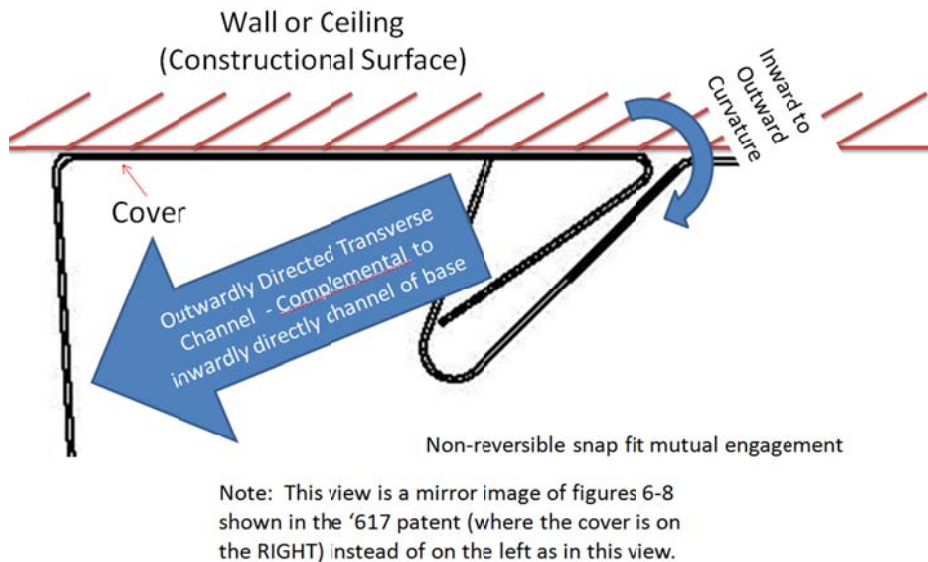
In addition to these two configurations, JG Innovations' web site includes CAD drawings of several other configurations which feature cosmetic differences but functionally address the same two scenarios - "L" shaped to accommodate two surfaces or a "U" shaped to adapt to a single surface.



48. Both claims 1b and 13b continue by reciting the engagement means used to connect these two cover profiles to the corresponding base means (again, called the "Shield Clips" by JG Innovations).

49. Claims 1b and 13b recite a *"second complementary engagement means having an inward-to-outward curvature complementary to said first engagement means of said base means, said curvature of said ends defining an outwardly directed longitudinal channel complementary to said inwardly directed channel of said distal ends of said base means, said respective channels proportioned for non-reversible snap-fittable mutual engagement therebetween."*

50. These elements are literally present in the JG Innovations cover as shown on the CAD drawings provided on the company web site and annotated below for clarity.

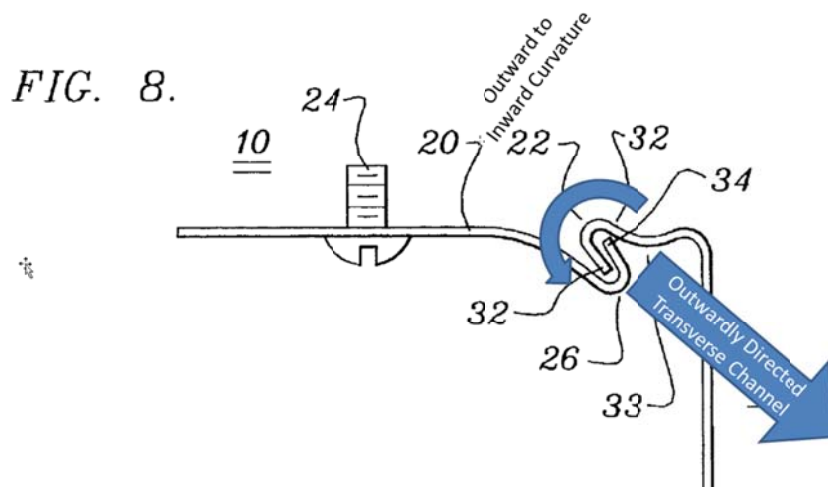


51. Thus, each and every limitation of claims 1b and 13b is present in the Accused Product and the Accused Product therefore literally infringe the two independent claims of the '671 patent.

52. In the document Defendants JG Innovations, Inc's and Gordon Grice's Non-Infringement Claim Chart (Exhibit A to Defendant's Response to Plaintiff's First Set of Interrogatories), defendants assert that the JGI Interlock™ Concealment System does not contain the element of "an inward-to-outward curvature." In drawing this conclusion, the defendants reference the '617 Patent, Col. 3, lines 48-50.

53. It is my opinion that this interpretation of the patent specification and claim requirements is flawed. The relevant language and figure from the '617 patent specification (annotated for clarity) are repeated here:

Said means 22 of cover means 16 is characterized by an inward-to-outward curvature that is complementary to the outward-to-inward curvature of end 26 of part 20 of base means 18. Said inward-to-outward curvature defines an outwardly directed longitudinal channel 30 which is complementary to said inwardly directed channel 28 of base means 18. Further, said inward-to-outward curvature of said ends 22 of cover means 16 defines an upper concave surface 32 and a lower convex surface 33.



54. The specification clearly indicates that the upper convex surface (32) and lower convex surface (33) are separate and distinct elements from the "outwardly directed longitudinal channel 30 which is complementary to said inwardly directed channel 28 of base means 18."
55. Thus to interpret the upper concave and lower convex surfaces as elements of independent claims 1 and 13 is in error.

56. This interpretation is further reinforced by inspection of the dependent patent claims.

Dependent claims 3, 4, 5, 6, 7, 8, 9, 15, 16, 17 and 18 specifically recite and refer to the structure and the utility of the concave and convex surfaces. Neither claim 1 nor claim 13 recites a concave or convex surface. The concave and convex surfaces of the longitudinal ends of the cover means relate to the application of sealants and adhesives which constitute elements of dependent claims listed above but are not part of the independent claims 1 and 13. Thus the assertion that the Accused Product does not infringe because the longitudinal ends of the cover means do not have concave or convex surfaces is in error. Indeed, I understand that defendants' assertion would violate the doctrine of claim differentiation.

57. Finally, any perceived difference between the engagement means of the cover means described in patent claims 1 and 13 and the design details illustrated in JG Innovations' CAD drawings are insubstantial as the Accused Product contains substantially identical engagement structure and serves to function identically with respect to claims 1 and 13 of the '617 patent. Accordingly, if any of these features are deemed not to be literally present in the engagement means of the cover means of the Accused Product, defendants nevertheless infringe the claims 1 and 13 of the '617 patent under the doctrine of equivalence .

#### **Substrate Material - '617 Patent claim 2 and 14**

58. A comparison of the dependent claims 2 and 14 shows that language used in these two claims is identical. Thus, for the purposes of this analysis, these two claims will be discussed as a single topic keeping in mind the distinction of their independent base claim.

59. Claims 2 and 14 teach the use of a *material with having a modulus in the range of 1 million to 30 million*. A person of ordinary skill in the art will recognize this as referring to modulus of elasticity which is a measure of the stiffness of the material. The modulus of elasticity is the ratio of stress, which has units of pressure, to strain, which is dimensionless; therefore, the modulus of elasticity has units of pressure.

60. In United States customary units, modulus of elasticity is expressed as pounds (force) per square inch (psi). Thus claims 2 and 14 teach the use of a material with a modulus of elasticity between  $1 \times 10^6$  psi and  $30 \times 10^6$  psi.

61. According to specifications available on the web site <http://www.jgius.com>, the JG Innovations' base ("Shield Clips") is fabricated from zinc-plated spring steel. The JG Innovations' cover is fabricated from Zinc Galvannealed Steel with a Factory painted powder coating finish with an alternative material being Stainless steel or Cold-Rolled Steel.

62. The commonly reported modulus of elasticity of the materials listed above ranges from 28 million PSI to 30 million psi. This can be found within a number of engineering reference materials and is repeated here for clarity from the web site:  
[http://www.engineersedge.com/manufacturing\\_spec/properties\\_of\\_metals\\_strength.htm](http://www.engineersedge.com/manufacturing_spec/properties_of_metals_strength.htm)

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Material	Ultimate Strength			Yield Point X 1000/in <sup>2</sup>	Modulus of Elasticity	
	(T) Tension X 1000/in <sup>2</sup>	Compression, in terms of T	Shear in terms of T		in Tension (E) x 10 <sup>6</sup> psi	in Shear, in terms of E
Cast Iron, grey, class 20	20 <sup>a</sup>	3.6 T - 4.4 T	1.6 T	.....	11.8	0.40 E
class 25	25 <sup>a</sup>	3.6 T - 4.4 T	1.4 T	.....	14.2	0.40 E
class 30	30 <sup>a</sup>	3.6 T - 4.4 T	1.4 T	.....	14.5	0.40 E
class 35	35 <sup>a</sup>	3.6 T - 4.4 T	1.4 T	.....	16.0	0.40 E
class 40	40 <sup>a</sup>	3.6 T - 4.4 T	1.3 T	.....	17	0.40 E
class 50	50 <sup>a</sup>	3.6 T - 4.4 T	1.3 T	.....	18	0.40 E
class 60	60 <sup>a</sup>	2.8 T	1.0 T	.....	19.9	0.40 E
Malleable	40 to 100	.....	.....	30 to 80	25	0.43 E
nodular (ductile iron)	60 to 120	.....	.....	40 to 90	23	.....
Cast Steel, carbon	60 to 100	T	0.75 T	30 to 70	30	0.38 E
low alloy	70 to 300	T	0.75 T	45 to 170	30	0.38 E
Steel, SAE 950	66 to 70	T	0.75 T	45 to 50	30	0.38 E
1125 (low carbon)	60 to 103	T	0.75 T	40 to 90	30	0.38 E
1145 (medium carbon)	80 to 162	T	0.75 T	50 to 162	30	0.38 E
1195 (high carbon)	90 to 213	T	0.75 T	20 to 150	30	0.38 E
1 12 (free cutting)	60 to 100	T	0.75 T	30 to 95	30	0.38 E
1112 (free cutting)	57 to 30	T	0.75 T	25 to 72	30	0.38 E
1130 (alloy)	90 to 162	T	0.75 T	27 to 149	30	0.38 E
2117 (alloy)	88 to 190	T	0.75 T	60 to 155	30	0.38 E
3 40 (alloy)	93 - 138	T	0.75 T	62 to 162	30	0.38 E
3110 (alloy)	104 to 172	T	0.75 T	56 to 142	30	0.38 E
4123 (alloy)	105 to 170	T	0.75 T	60 to 114	30	0.38 E
4 30 (alloy)	81 to 179	T	0.75 T	46 to 161	30	0.38 E
4340 (alloy)	109 to 220	T	0.75 T	68 to 200	30	0.38 E
4140 (alloy)	98 to 192	T	0.75 T	62 to 169	30	0.38 E
4120 (alloy)	98 to 209	T	0.75 T	68 to 184	30	0.38 E
5 50 (alloy)	98 to 210	T	0.75 T	51 to 190	30	0.38 E
5100 (alloy)	100 to 238	T	0.75 T	81 to 228	30	0.38 E
6 50 (alloy)	96 to 228	T	0.75 T	59 to 210	30	0.38 E
8150 (alloy)	110 to 226	T	0.75 T	69 to 206	30	0.38 E
8140 (alloy)	100 to 179	T	0.75 T	60 to 165	30	0.38 E
9110 (alloy)	117 to 187	T	0.75 T	63 to 162	30	0.38 E
9140 (alloy)	120 to 265	T	0.75 T	45 to 50	30	0.38 E
<b>Steel Stainless, SAE</b>						
31302 <sup>f</sup>	85 to 125	T	.....	35 to 95	28	0.45 E
31321 <sup>f</sup>	85 to 35	T	.....	30 to 60	28	.....
31347 <sup>f</sup>	90 to 100	T	.....	35 to 65	28	0.40 E
5 420 <sup>f</sup>	95 to 230	T	.....	50 to 195	29	.....
5 430 <sup>f</sup>	75 to 35	T	.....	40 to 70	29	.....
5 445 <sup>f</sup>	80 to 35	T	.....	50 to 70	29	.....
5 501 <sup>f</sup>	70 to 175	T	.....	30 to 135	29	.....
<b>Structural Steel</b>						
Common	60 to 75	T	0.75 T	33	29	0.41 E
Rivet	52 to 52	T	0.75 T	28	29	.....

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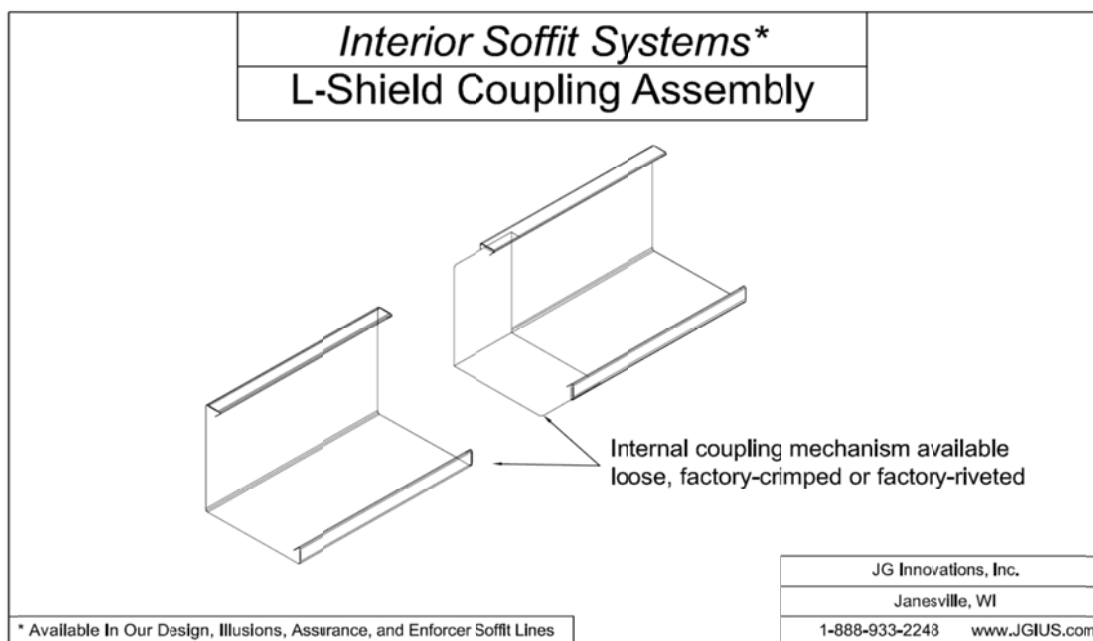
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63. Thus, the Accused Product literally infringes claims 2 and 14 of the '617 patent.

**Interlock between covers - '617 Patent claim 10**

64. Claim 10 recites: *"The system as recited in claim 2 in which lateral ends of said integral surfaces of said cover means include therein means for lateral interlock between opposing ends thereof."*

65. According to CAD drawings available on the web site <http://www.jgius.com>, the Accused Products incorporates a component called an "L-Shield" coupling assembly intended to allow for the lateral interlock of cover panels by means of crimping or riveting.



66. Furthermore, according to specifications available on the web site <http://www.jgius.com>:

6. *Soffit material joints shall be butt-joined with interlocking internal splice couplings and/or with male/female interlocking joints.*

67. Thus, the Accused Product literally infringes claim 10 of the '617 patent.

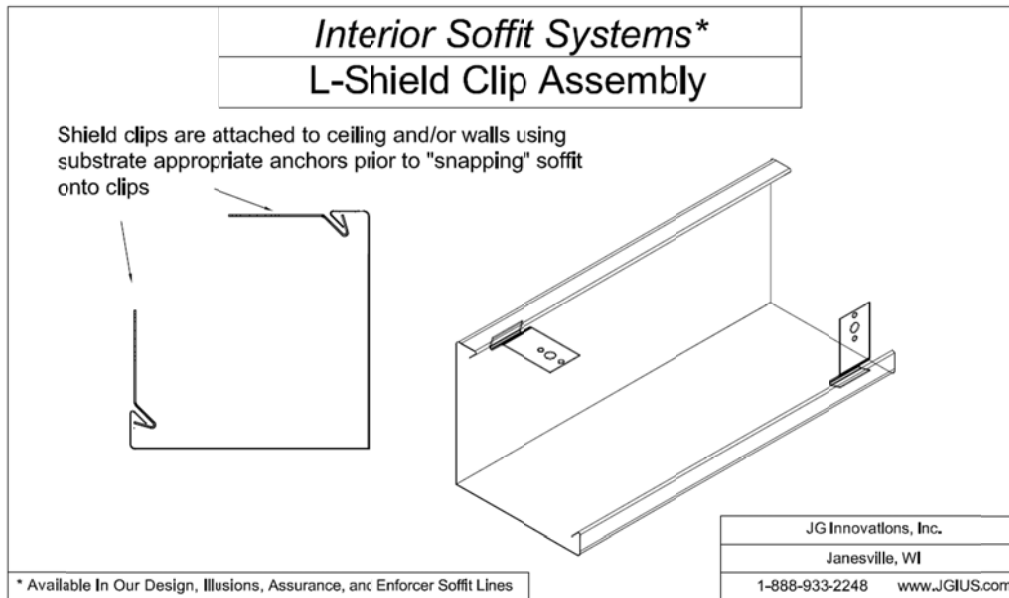
68. Finally, any perceived difference between the interlock recited in patent claim 10 of the '617 patent and the design details illustrated in JG Innovations' CAD drawings are insubstantial as the Accused Product contains substantially identical interlock means and serves to function identically with respect to claim 10. Accordingly, if this feature is deemed not to be literally present in the Accused Product, defendants nevertheless infringe claim 10 of the '617 patent under the doctrine of equivalence.

**Base comprised of two parts - '617 Patent claim 11**

69. Patent claim 11 recites "the system as recited in claim 2 in which said base means comprises two discontinuous parts."

70. According to CAD drawings available on the web site <http://www.jgius.com>, JG Innovations utilizes two "Shield Clips" between the two longitudinal ends to attach the "L" shaped cover. This is shown in the attached CAD drawing.





71. Thus, through their use of two discontinuous "Shield Clips" to achieve the base means, the Accused Product literally infringes claim 11 of the '617 patent.

72. Finally, any perceived difference between the discontinuous base means described in patent claim 10 of the '617 patent and the Accused Product are insubstantial as the Accused Product contains substantially identical discontinuous base means and serves to function identically with respect to claim 11. Accordingly, if this feature is deemed not to be literally present in the Accused Product, defendants nevertheless infringe claim 11 of the '617 patent under the doctrine of equivalence.

### Conclusion

73. I reserve the right to supplement my opinions in this report based on additional information that may be discovered during the course of this litigation, including exemplars of the Accused Product, or other circumstances that may impact my opinions. In addition, I reserve the right to

supplement my opinions in the event that JG Innovations raises any new issues in response to this report.

74. At hearing and/or trial, I may rely on material and documents publicly available or produced in this litigation, as well as documents the parties have exchanged, such as interrogatory responses. I may also rely on visual aids and demonstrative exhibits that I may prepare or have prepared based on these materials.

75. Dated this 13th day of September, 2010

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David C. Franchino